

U.S. Application No.: 10/729,047
Amendment A
Attorney Docket: 3968-097

REMARKS

Review and reconsideration of the Office Action mailed May 4, 2007 (hereinafter "Office Action"), is respectfully requested in view of the above amendments and the following remarks. At the time of the Office Action, claims 1-9 and 12-22 were pending and claims 10 and 11 were withdrawn. The Office Action rejected all of the claims under 35 U.S.C. §112, second paragraph, 35 U.S.C. §102(b) and/or 35 U.S.C. §103(a). The rejections and response thereto are set forth fully below. By this Amendment, claims 1-22 are cancelled and claims 23- 28 added. No new matter is added.

Support for New Claims

Support for new claims 23 and 28 can be found throughout the specification, including cancelled claims 1 and 12 and paragraphs [0013]-[0014]. Support for barnacles and phytoplankton being considered biofouling organisms can be found throughout the specification, including examples 6 and 7, *see Specification, paragraphs [0058]-[0065]*.

Support for new claims 24 and 25 can be found throughout the specification, including paragraph [0035]. Support for new claim 26 can be found throughout the specification, including paragraph [0040]. Support for new claim 27 can be found throughout the specification, including paragraph [0043].

Accordingly, no new matter is added.

Claim Rejections Under 35 U.S.C. § 112, second paragraph

In the Office Action, claims 1-22 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the rejection applies to (i) the phrases describing what substituents X and Y represent, (ii) the use of "based" in reference to the polymers in the film forming components, and (iii) the reference to covalent bonding in claim 6.

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The first of the three rejections dealt with the following language from cancelled claims 1, 12, 21 and 22: "wherein X' represents hydrogen or a straight or branched chain, substituted or unsubstituted lower alkyl, or a straight or branched chain, substituted or unsubstituted lower alkenyl." In order to clarify, new claims 23 and 28 have eliminated the term "chain" from this phrase. Applicant believes that this amendment, particularly in view of the definitions found in paragraphs [0021] – [0026], makes it clear that X' can be a substituted or unsubstituted lower alkyl compound that is either straight or branched, or a substituted or unsubstituted lower alkenyl compound that is either straight or branched.

The cancellation of claims 1-22 renders the remaining rejections under 35 U.S.C. § 112, second paragraph, moot. Accordingly, Applicant respectfully requests that the rejection under 35 U.S.C. § 112, second paragraph, be withdrawn.

Claimed Invention

The claimed invention is drawn to an article having an underwater surface, at least a portion of said surface being coated with a coating that includes a compound for inhibiting the attachment of biofouling organisms, including barnacles and phytoplankton, on surfaces. The claimed invention is also drawn to a method of protecting a surface exposed to an aqueous environment from attachment of biofouling organisms, including barnacles and phytoplankton. The claimed invention is drawn to uses of compounds that inhibit the attachment of biofouling organisms, including barnacles and phytoplankton. As discussed in more detail below, this makes the claimed articles and methods clearly distinguishable from compounds that kill bacteria, yeast and fungi, and those that may include derivatives of the claims compounds.

Claim Rejections Under 35 U.S.C. § 102

In the Office Action, claims 1-9 and 12-18 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,774,080 issued to Yamamori *et al.* (hereinafter "Yamamori"). Yamamori is drawn to:

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a novel type of *hydrolyzable* resin composition which has an excellent film-forming property and whose resin is characterized by having at the side chain portions a particular group *capable of resulting a hydrophilic group through hydrolysis*, being hydrolyzed and dissolved in sea water at an appropriate rate, and being prepared without the necessity of using a triorganotin compound which is an expensive and toxic material.

Yamamori, col. 2, ln. 39-47.

Yamamori is drawn to a resin, *e.g.* an acrylic, a polyester or an epoxy, that has at least one side chain bearing a terminal group of the formula: $-X-[-O-M-R]_x$. In Yamamori's formula, M = zinc, copper or tellurium and R is an organic acid residue, *see* Yamamori, Abstract. Yamamori discloses that the resin may additionally include a long list of antifouling agents, *see* Yamamori, col. 8, ln. 61 – col. 9, ln. 2.

As noted above, the claimed articles and methods include compositions having an antifouling compound of Formula (IA). Yamamori discloses methyl-esters as anti-fouling compounds (*see* Yamamori, col. 5, ln. 54-56) that may be hydrolyzably linked to a resin, *e.g.* acrylic, a polyester or an epoxy.

Absent hydrolysis it is clear that Yamamori does not disclose or suggest the claimed compounds. Even upon hydrolysis the liberated compounds would be separate and distinct from the coating material disclosed by Yamamori. Furthermore, Yamamori clearly relies primarily on generating well-known anti-fouling metal ions as a result of the hydrolysis, *see* Yamamori, col. 8, ln. 55-60. This makes it impossible to determine the effect of any half-esters that may also be present. Accordingly, Yamamori does not disclose or suggest using the claims compounds of Formula (IA) for inhibiting the attachment of biofouling organisms, including barnacles and phytoplankton, on an underwater surface.

Yamamori discloses that additional antifouling agents may be included. However, Yamamori's list of additional antifouling agents fails to disclose the claimed compounds, *see* Yamamori, col. 8, ln. 61 – col. 9, ln. 2. The claimed compounds (IA) are simply not present in

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Yamamori. For at least the above reasons, Yamamori does not disclose or suggest the claimed invention, which inhibits the attachment of biofouling organisms, including barnacles and phytoplankton. Accordingly, Applicant respectfully requests that the anticipation rejection based on Yamamori be withdrawn.

In the Office Action, claims 1-5, 7-9 and 12-18 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,507,822 issued to Miyami *et al.* (hereinafter "Miyami"). Miyami is drawn to a tooth coating composition that includes a mixture of a vinyl resin composition and a cyanoacrylate, *see* Miyami, Abstract. One claim discloses the use of a minimal amount of menthol, *see* Miyami, claim 8. However, Miyami does not provide any indication why the menthol was included in the coating for human teeth of claim 8, *see, generally*, Miyami.

Because Miyami deals with the environment of the oral cavity, which is free from barnacles and phytoplankton, Miyami does not disclose or suggest an underwater surface coated with a coating that inhibits attachment of biofouling organisms, including barnacles and phytoplankton. Nor does Miyami disclose or suggest the claimed method of inhibiting attachment of such biofouling organisms. Accordingly, Applicant respectfully requests withdrawal of the anticipation rejection based on Miyami.

Claim Rejections Under 35 U.S.C. § 103(a)

In the Office Action, claims 1-9 and 12-18 were rejected under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 5,294,645 issued to Chastain *et al.* (hereinafter "Chastain"). Chastain discloses the use of menth-1-en-9-ol in order to kill bacteria, yeast and fungi.

In contrast to Chastain, the claimed invention deals with underwater articles that include a coating composition that can prevent the attachment of biofouling organisms, including barnacles and phytoplankton, and related methods of inhibiting attachment of such biofouling organisms to surfaces. Chastain deals exclusively with bacteria, yeast and fungi and does not {WP426580;1}

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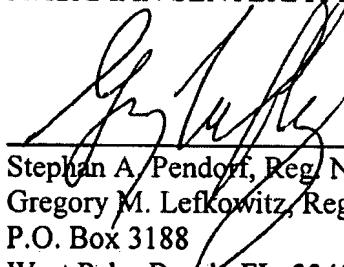
disclose or suggest using the claimed compounds of Formula (IA) to inhibit attachment of barnacles or phytoplankton. Clearly, Chastain does not render the claimed invention unpatentable. Accordingly, Applicant respectfully requests that the rejection based on Chastain be withdrawn.

Conclusion

For at least the reasons set forth above, the independent claims are believed to be allowable. In addition, the dependent claims are believed to be allowable due to their dependence on an allowable base claim and for further features recited therein. The application is believed to be in condition for immediate allowance. If any issues remain outstanding, Applicant invites the Examiner to call the undersigned if it is believed that a telephone interview would expedite the prosecution of the application to an allowance.

Respectfully submitted,

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Dated: September 4, 2007

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